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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,707	12/15/2005	George Marmaropoulos	US030209US	6795
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EXAMINER				
PIZZALI, ANDREW T				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/560,707

Applicant(s)

MARMAROPOULOS ET AL.

Examiner

Andrew T. Piziali

Art Unit

1786

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 21-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 21-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-06)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/11/2010 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-9 and 21-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 1, the specification fails to disclose how to make a textile construction wherein a plastic or rubber actuator mechanically interacts with a conductive elastomeric material to convert the mechanical interaction therewith into a signal. For example, the specification fails to disclose how to make a signal via the mechanical interaction between the actuator and the conductive elastomeric material.

Regarding claim 2, the specification does not enable one skilled in the art to make or use the textile of claim 1 wherein one or more characteristics of the conductive elastomeric material change in response to an interaction.

Regarding claim 9, the specification does not enable one skilled in the art to make or use the textile of claim 1 wherein one or more characteristics of the conductive elastomeric material change in proportional response to the mechanical interaction wherein said mechanical interaction causes one or more areas of the conductive elastomeric material to be displaced.

Regarding claim 21, the specification does not enable one skilled in the art to make or use an actuator that cooperates with two or more conductive areas.

Regarding claim 22, the specification does not enable one skilled in the art to make or use one or more conductive areas wherein one or more characteristics change in response to a mechanical interaction with the actuator.

Regarding claim 23, the specification does not enable one skilled in the art to use said displacement ratio as claimed.

Regarding claim 24, the specification does not enable one skilled in the art to cause one or more areas of the conductive elastomeric material to be displaced by the conductive elastomeric material interaction in addition to the actuator interaction.

Regarding claims 25-27, the specification does not enable one skilled in the art to make or use the interface to be operable as claimed.

Regarding claim 28, the specification does not enable one skilled in the art to make or use a conductive fiber having a conductive threadlike core.

Regarding claims 29-31, the specification does not enable one skilled in the art to make or use a conductive fiber with a semi-fluid sleeve.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-9 and 21-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "in proximity with" renders the claims indefinite. It is not clear what distance is being claimed.

Regarding claim 6, the phrase "rigid material" renders the claim indefinite. All materials are flexible and rigid to a degree. It is not clear what rigidity is being claimed.

Regarding claims 29-31, the phrase "semi-fluid sleeve" renders the claims indefinite. It is not clear what materials are considered semi-fluid, thereby rendering the scope of the claims unascertainable.

Claim Rejections - 35 USC § 102/103

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-6, 8, 9 and 21-27 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over USPN 6,360,615 to Smela.

Smela discloses a textile construction comprising: a conductive elastomeric material (stretchable responsive material) suitable for converting an interaction therewith into a signal; and an actuator (fastening strap) that operates with said conductive elastomeric material to provide a user interface such that a user interaction with the actuator does one of move and mechanically interact with the conductive elastomeric material to cause the conductive elastomeric material to produce the signal, wherein said actuator is in contact with a surface of the conductive elastomeric material and is formed from plastic (see entire document including the Figures, column 4, lines 18-34, and column 7, lines 8-67).

Regarding the claimed process of using the actuator with respect to visual markings, the limitation fails to further limit the structure of the textile construction. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Regarding claim 2, one or more characteristics (e.g., resistance) of the conductive elastomeric material changes in response to the interaction (column 4, lines 18-34 and column 7, lines 7-12).

Regarding claim 3, the conductive elastomeric material has piezoelectric characteristics (column 7, lines 59-67).

Regarding claim 4, the conductive elastomeric material comprises any of the claimed conjugated polymers or ion-implanted polymer (column 7, line 59 through column 8, line 3).

Regarding claim 5, the conductive elastomeric material can have one or more of the claimed elements (column 8, lines 4-6).

Regarding claim 6, the actuator (fastening strap) must remain in place during movement while the conductive elastomeric material flexes during movement and is made of “flexible” metal coated-fabric (column 8, lines 4-6). Therefore, it appears that the actuator is formed from a rigid material.

Regarding claim 8, the actuator includes VELCRO strips (visual markings) (see Figures).

Regarding claim 9, one or more characteristics of said conductive elastomeric material changes in proportional response to said interaction, said interaction causing one or more areas of said conductive elastomeric material to be displaced (column 9, lines 3-8).

Regarding claims 21, the actuator is cooperative with two or more conductive areas (see Figures).

Regarding claim 22, one or more characteristics of said one or more conductive areas change in response to an interaction with said actuator (column 7, lines 8-13).

Regarding claim 23, the intended use recitation of the claimed invention does not result in a structural difference between the claimed invention and the prior art.

Regarding claim 24, the interaction causes one or more areas of said conductive elastomeric material to be displaced without requiring a lateral displacement of said actuator (see Figures).

Regarding claims 25-27, considering that the textile construction disclosed by the applied prior art is substantially identical to the claimed textile construction, the user interface is inherently operable as claimed.

9. Claims 1-9 and 21-31 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over USPAP 2002/0075232 to Daum.

Daum discloses a textile construction comprising: a conductive (elastomeric) rubber material layer suitable for converting an interaction therewith into a signal; and an actuator (outer rubber layer) that operates with said conductive rubber to provide a user interface such that a user interaction with the actuator does one of move and mechanically interact with the conductive rubber to cause said conductive rubber to produce a signal, wherein said actuator is in contact with a surface of said conductive rubber and is also formed from rubber (see entire document including the Figures, [0009], [0033], [0035], [0038], [0039], [0047]).

Regarding the claimed process of using the actuator with respect to visual markings, the limitation fails to further limit the structure of the textile construction. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Regarding claim 2, one or more characteristics (e.g., resistance) of the conductive elastomeric material changes in response to the interaction ([0037] and [0038]).

Regarding claim 3, the conductive elastomeric material has piezoelectric characteristics ([0037] and [0038]).

Regarding claim 4, the conductive rubber may comprise a conjugated polymer [0034].

Regarding claim 5, the conductive elastomeric material can have one or more of the claimed elements (Figures and [0039]).

Regarding claims 6 and 7, the rubber actuator material is rigid [0035].

Regarding claim 8, the actuator includes a fastener (visual marking) [0033].

Regarding claim 9, one or more characteristics of said conductive elastomeric material changes in proportional response to said interaction, said interaction causing one or more areas of said conductive elastomeric material to be displaced ([0038], [0039], and [0047]).

Regarding claims 21, the actuator is cooperative with two or more conductive areas ([0047]).

Regarding claim 22, one or more characteristics of said one or more conductive areas change in response to an interaction with said actuator ([0038] and [0047]).

Regarding claim 23, the intended use recitation of the claimed invention does not result in a structural difference between the claimed invention and the prior art.

Regarding claim 24, the interaction causes one or more areas of said conductive elastomeric material to be displaced without requiring a lateral displacement of said actuator ([0038] and [0047]).

Regarding claims 25-27, considering that the textile construction disclosed by the applied prior art is substantially identical to the claimed textile construction, the user interface is inherently operable as claimed.

Regarding claims 28-31, Daum discloses that the conductive elastomeric material is formed from conductive fibers having a conductive core ([0039]).

Claim Rejections - 35 USC § 103

10. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,360,615 to Smela as applied to claims 1-6, 8, 9 and 21-27 above, and further in view of USPN 6,102,878 to Nguyen.

Smela discloses that fastening straps may comprise VELCRO material (column 7, lines 13-27), but Smela does not appear to specifically mention rubber material. Nguyen discloses that it is known in the finger strap art to use VELCRO or rubber (see entire document including column 3, lines 37-56). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute rubber for the VELCRO, because it is within the general skill of a worker in the art to select a known material on the basis of its suitability and desired characteristics.

The substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958). When a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result. *KSR v. Teleflex*.

11. Claims 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,360,615 to Smela as applied to claims 1-6, 8, 9 and 21-27 above, and further in view of USPPAP 2002/0075232 to Daum.

Smela discloses that the elastomeric conductive material may be a metal coated fabric (column 8, lines 4-6), but Smela does not appear to specifically mention the elastomeric conductive material being formed from conductive fibers having a conductive core. Daum discloses that it is known in the wearable strain-gauge device art to use conductive fibers having a conductive core to measure strain change (see entire document including [0039]). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the conductive material disclosed by Daum for the conductive material of Smela, because it is within the general skill of a worker in the art to select a known material on the basis of its suitability and desired characteristics.

The substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958). When a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result. *KSR v. Teleflex*.

12. Claims 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,360,615 to Smela as applied to claims 1-6, 8, 9 and 21-27 above, and further in view of USPN 5,346,649 to Karna.

Smela discloses the use of electrically conductive coated plastic fibers (column 7, lines 33-58), but Smela does not appear to specifically teach the claimed core conductive fiber material. Karna discloses that intrinsically electrically conducting plastic material is known (see entire document including column 1, lines 6-35). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the conductive fibers from any suitable material, such as that disclosed by Karna, because the fibers are lightweight, possess advantages mechanical properties, possess good corrosion resistance, and/or because the fibers are low cost (column 1, lines 17-27), and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability and desired characteristics.

The substitution of known equivalent structures involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958). When a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result. *KSR v. Teleflex*.

13. Claims 1-9 and 21-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPAP 2001/0017759 to Marmaropoulos in view of USPN 6,360,615 to Smela.

Marmaropoulos discloses a textile construction comprising a conductive elastomeric material suitable for converting a mechanical interaction therewith into at least one signal, an actuator in contact with the surface of the conductive elastomeric material that cooperates with the conductive elastomeric material to provide a user interface such that a user mechanical interaction with the actuator produces at least one electronic signal, and wherein the actuator includes visual markings such that a user may see where or in what manner the mechanical interaction should be made to obtain a predefined function of an electronic device associated with the textile construction that responds to the at least one electronic signal (see entire document including Figures 3 and 4, [0016], [0022], [0023] and [0024]).

Marmaropoulos is silent with regards to specific actuator materials, therefore, it would have been necessary and thus obvious to look to the prior art for conventional materials. Smela discloses that it is known in the art to use plastic housings (see entire document including the paragraph bridging columns 11 and 12). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the actuator from plastic, motivated by the expectation of successfully practicing the invention of Marmaropoulos.

Regarding claim 2, one or more characteristics (e.g., resistance) of the conductive elastomeric material changes in response to the interaction [0016].

Regarding claims 3 and 4, the conductive elastomeric material has piezoelectric characteristics [0017]. In addition, Smela discloses that it is known in the art to use piezoelectric materials such as that claimed (column 7, line 59 through column 8, line 3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the cord from any suitable conductive elastomeric material, such as that currently claimed, because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability and desired characteristics.

Regarding claim 5, the conductive elastomeric material can have one or more of the claimed elements [0016].

Regarding claim 6, the actuator material is necessarily rigid to allow for mechanical use.

Regarding claim 7, Marmaropoulos does not specifically disclose that the actuator (48) is formed from rubber, but Marmaropoulos does disclose that the actuator is an insulating grip for a jacket [0023]. The examiner takes official notice that rubber is a known material used for gripping products. It would have been obvious to one having ordinary skill in the art at the time

the invention was made to make the insulating grips from any suitable material, such as rubber, because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability and desired characteristics.

Regarding claim 8, the actuator includes visual markings (Figure 4).

Regarding claim 9, one or more characteristics of said conductive elastomeric material changes in proportional response to said interaction, said interaction causing one or more areas of said conductive elastomeric material to be displaced ([0023] and [0024]).

Regarding claims 21, the actuator is cooperative with two or more conductive areas (Figure 4).

Regarding claim 22, one or more characteristics of said one or more conductive areas change in response to an interaction with said actuator ([0023] and [0024]).

Regarding claim 23, the degree of displacement is measured [0017].

Regarding claim 24, the interaction causes one or more areas of said conductive elastomeric material to be displaced without requiring a lateral displacement of said actuator (Figure 4).

Regarding claims 25-27, the user interface is operable for manipulation of three or more functions (Figure 4).

Regarding claims 28-31, the conductive elastomeric material is formed from conductive fibers having a conductive core [0016].

Response to Arguments

14. Applicant's arguments filed 5/11/2010 have been fully considered but they are not persuasive.

Regarding the enablement rejections, the applicant cites a portion of the specification that discloses that the use of electronics in various manufactured materials is known. The applicant also cites a portion of the specification that mentions specific conductive elastomeric materials that may be used to construct the textile construction. The applicant also cites a portion of the specification that discloses that the conductive elastomeric materials may be fashioned in different fabric configurations, such as woven or knit. The applicant also cites a portion of the specification that discloses that the interface may be integrated with a garment by known methods. Applicant's argument is not persuasive because the cited portions do not address how to make a textile construction wherein a plastic or rubber actuator mechanically interacts with a conductive elastomeric material to convert the mechanical interaction therewith into a signal.

Regarding claims 29-31, the specification does not enable one skilled in the art to make or use a conductive fiber with a conductive fluid or semi-fluid sleeve. In addition, the phrase "semi-fluid sleeve" renders the claims indefinite because it is not clear what materials are considered semi-fluid, thereby rendering the scope of the claim unascertainable.

The applicant asserts that the article of Smela does not provide a user interface and that the actuator fails to operate with the conductive material to produce a signal as claimed. The examiner respectfully disagrees. Smela discloses a textile construction comprising: a conductive elastomeric material (stretchable responsive material) suitable for converting an interaction therewith into a signal; and an actuator (fastening strap) that operates with said conductive elastomeric material to provide a user interface such that a user interaction with the actuator does one of move and mechanically interact with the conductive elastomeric material to cause the conductive elastomeric material to produce the signal, wherein said actuator is in contact with a surface of the conductive elastomeric material and is formed from plastic (see entire document including the Figures, column 4, lines 18-34, and column 7, lines 8-67).

The applicant also asserts that Smela does not teach or suggest operating the actuator with respect to visual markings as claimed. Applicant's argument is not persuasive the limitation fails to further limit the structure of the textile construction. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

The applicant asserts that the article of Daum does not provide a user interface and that the actuator fails to operate with the conductive material to produce a signal as claimed. The examiner respectfully disagrees. Daum discloses a textile construction comprising: a conductive (elastomeric) rubber material layer suitable for converting an interaction therewith into a signal; and an actuator (outer rubber layer) that operates with said conductive rubber to provide a user interface such that a user interaction with the actuator does one of move and mechanically interact with the conductive rubber to cause said conductive rubber to produce a signal, wherein said actuator is in contact with a surface of said conductive rubber and is also formed from rubber (see entire document including the Figures, [0009], [0033], [0035], [0038], [0039], [0047]).

The applicant also asserts that Daum does not teach or suggest operating the actuator with respect to visual markings as claimed. Applicant's argument is not persuasive the limitation fails to further limit the structure of the textile construction. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Piziali whose telephone number is (571) 272-1541. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew T Piziali/
Primary Examiner, Art Unit 1786